NON-PUBLIC?: N
ACCESSION #: 9411020250
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Salem Generating Station Unit 2 PAGE: 1 OF 5

DOCKET NUMBER: 05000311

TITLE: Manually - Initiated Reactor Trip Signal Following
Unplanned Closure of Main Steam Isolation Valves 21 and
22 MS167
EVENT DATE: 09/29/94 LER #: 94-011-00 REPORT DATE: 10/19/94

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 28

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: M.J. Pastva, Jr. Licensee Event TELEPHONE: (609) 339-5165
Report Coordinator

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

The Nuclear Control Operator (NCO) with balance of plant (BOP) responsibilities mistakenly-closed main steam line isolation valves 21 and 22MS167. The other operating crew NCOs recognized this mistake however, they had insufficient time to intervene in order to avoid an automatic protective response. The BOP NCO, realizing the mistake, immediately initiated a manual reactor trip signal, at 0232 hours on 9/29/94. Expected plant response occurred and Emergency Operating Procedures were entered. Main steam was isolated to limit Reactor Coolant System cooldown and the Unit was stabilized in HOT STANDBY at 0317 hours (same day). This event is attributed to personnel error by the BOP NCO, as a result of inadequate self-checking and inattention to detail. A Human Performance Enhancement System evaluation of this event has been conducted. Appropriate personnel corrective actions have been

taken. Observations of operations personnel are ongoing to ensure adequacy of self verification techniques. During the trip recovery, an incorrect attempt was made to reset the Safeguards Equipment Controllers (SECs) and Technical Specification (TS) 3.0.3 was entered. Two SECs were reset and TS 3.0.3 was exited. Subsequent review showed the TS 3.0.3 entry was invalid and the involved overhead alarm (OHA) response procedure was inadequate. Appropriate procedure changes will be made regarding the attempt to reset the SECs.

END OF ABSTRACT

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as {xx}

IDENTIFICATION OF OCCURRENCE:

Manually Initiated Reactor Trip Signal Following Unplanned Closure Of Main Steam Isolation Valves 21 and 22MS167

Event Date: 9/29/94

Report Date: 10/19/94

This report was initiated by Incident Report Nos. 94-278 and 94-279.

CONDITIONS PRIOR TO OCCURRENCE:

Mode 1 Reactor Power 28% Unit Load 230 MWe

Ascension to full power was in progress and reactor power was being increased at 5% per hour. Shortly before 0232 hours on September 29, 1994, the Nuclear Control Operator (NCO) with balance of plant (BOP) responsibilities, was preparing to close main steam line drain valves 21-24MS7, in accordance with Step 5.1.5.E. of procedure S2.OP-IO.ZZ-0004(Q), "Power Operation".

DESCRIPTION OF OCCURRENCE:

The BOP NCO mistakenly closed main steam line isolation valves (MSIVs) 21 and 22MS167 by removing the protective plastic bezel

cover and depressing the valve control pushbuttons located on the BOP control panel. The mistake was observed by the other operating crew NCOs and they verbally informed the BOP NCO of the mistake. The other operating crew NCOs had insufficient time to intervene in order to avoid an automatic protective response. The BOP NCO, realizing the mistake, immediately initiated a Reactor Protection System (RPS) {JC} manual reactor trip signal, at 0232 hours on September 29 1994. The manual trip was anticipatory to an automatic reactor trip signal, which occurred approximately five seconds later.

Plant response was as expected following the trip. Emergency Operating Procedures, EOP-TRIP-1, "Reactor Trip Or Safety Injection"

DESCRIPTION OF OCCURRENCE: (cont'd)

and EOP-TRIP-2, "Reactor Trip Response" were entered and at 0237 hours (same day) main steam was isolated to limit cooldown of the Reactor Coolant System (RCS). The Unit was stabilized in MODE 3 (HOT STANDBY) and at 0317 hours Integrated Operating Procedure (IOP)-8, "Maintaining Hot Standby", was entered. At 0323 hours (same day), the Nuclear Regulatory Commission (NRC) was notified of this event, in accordance with 10CFR50.72(b)(2)(ii).

ANALYSIS OF OCCURRENCE:

Following the BOP NCO's mistake, insufficient time existed to avoid an automatic protective response. The manual reactor trip was anticipatory to an expected automatic reactor trip and in accordance with management expectations. It is intended to reduce the probability of challenge to plant safety systems.

Following the trip, 21 and 22 steam generator levels decreased to approximately 11%. RCS temperature decreased to 530 degrees Fahrenheit and the remaining MSIVs, 23 and 24MS167, were closed to adequately limit the cooldown rate.

Prior to performing Step 5.1.5.E, "CLOSE 21-24MS7", the BOP NCO acknowledged his understanding of the intent of the step. However, as a result of inadequate self-checking and inattention to detail, he removed the bezel cover over the 21 and 22MS167 pushbutton controls and depressed the pushbuttons for the valves. The 21-24MS7 pushbuttons are located in the top portion of the control bezel, the 21-24MS18 pushbuttons (main steam warmup valves) in the middle, and

the 21 and 22MS167 pushbuttons in the bottom portion of the bezel. Following completion of immediate actions prescribed in EOP-TRIP-1, the BOP NCO was relieved by the Senior Nuclear Shift Supervisor (SNSS).

While performing EOP-TRIP-2, the Nuclear Shift Supervisor inadvertently crossed over the flow chart logic lines, and read two steps resulting in an inappropriate attempt to reset the Safeguards Equipment Controllers (SEC) {JC} through depressing the 230 volt (V) Control Centers Reset pushbuttons. This initiated the "Non-Mode Op" automatic test insertion (ATI) fault feature on the SECs, which caused the Control Room Overhead Alarm (OHA) A-29, "2A, 2B, & 2C SEC TRBL" to annunciate. In accordance with the OHA response procedure, the three SECs (2A, 2B, and 2C) were declared inoperable and Technical Specification (TS) 3.0.3 was entered at 0245 hours (same day). The SEC automatic test faults tested satisfactorily and TS 3.0.3 was

ANALYSIS OF OCCURRENCE: (cont'd)

subsequently exited at 0338 hours (same day), following reset of 2A and 2B SECs. Subsequent review by Engineering showed that the SECs were not rendered inoperable by being reset therefore, the TS 3.0.3 entry was invalid. In addition, this review showed that the alarm response procedure did not adequately address ATI alarms when either the "230V Control Centers Reset" or the Emergency Loading Reset" pushbuttons are depressed.

As the result of prior excessive post-trip RCS cooldowns, design changes have been implemented and EOP-TRIP-1 has been revised to provide direction on throttling auxiliary feedwater flow (reference LER 272/94-011-00). Engineering is continuing to assess additional corrective actions to minimize cooldowns following reactor trips.

APPARENT CAUSE OF OCCURRENCE:

This event is attributed to "Personnel Error", as classified in Appendix B of NUREG-1022. This was exemplified by the BOP NCO's inadequate self-checking and inattention to detail, which resulted in the incorrect closing of 21 and 22MS167.

PREVIOUS OCCURRENCES:

Review of documentation shows this is an isolated occurrence.

SAFETY SIGNIFICANCE:

This occurrence had minimal safety significance and is reportable pursuant to 10CFR50.73(a)(2)(iv). The RPS functioned as designed and the heat sink was maintained.

CORRECTIVE ACTION:

A Human Performance Enhancement System evaluation of this event has been conducted.

Based upon the circumstances of this event and other prior performance issues regarding the involved individual, appropriate disciplinary action has been taken, including removal from the station Operations Department.

CORRECTIVE ACTION: (cont'd)

Observations of Operations personnel are ongoing to ensure adequacy of self verification techniques.

Appropriate procedure changes will be made to incorporate lessons learned from the sequence of activities resulting in the resetting of the SEC controllers during performance of EOP-TRIP-2.

The OHA response procedure associated with this event will be revised, as required.

General Manager -
Salem Operations

MJPJ:pc
SORC Mtg. 94-081

PSE&G

Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038

Salem Generating Station

October 19, 1994

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Dear Sir:

SALEM GENERATING STATION
LICENSE NO. DPR-75
DOCKET NO. 50-311
UNIT NO. 2

LICENSEE EVENT REPORT 94-011-00

This Licensee Event Report is being submitted pursuant to the requirements of Code of Federal Regulation 10CFR50.73(a)(2)(iv). Issuance of this report is required within thirty (30) days of event discovery.

Sincerely yours,

J. J. Hagan
General Manager -
Salem Operations

MJPJ:pc

Distribution

The power is in your hands

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